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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,914	09/29/2003	Kurt Leipold	Harman.7297	7350
50811 7590 12/13/2007 O'SHEA, GETZ & KOSAKOWSKI, P.C. 1500 MAIN ST. SUITE 912 SPRINGFIELD, MA 01115			EXAMINER LAO, LUN S	
			ART UNIT 2615	PAPER NUMBER
			MAIL DATE 12/13/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/673,914

Applicant(s)

LEIPOLD, KURT

Examiner

Lun-See Lao

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Introduction

1. This action is response to the amendment filed on 09-28-2007. Claims 1, 12, 13, 17, 21 and 27-29 have been amended. Claims 1-34 are pending.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the a loudspeaker having a resonant volume formed by a first cavity situated inside of the at least one door and a second cavity situated inside a structural component of a frame of the at least one door and outside of any other door within the vehicle must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

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application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The amendment filed 09-28-2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: a loudspeaker having a resonant volume formed by a first cavity situated inside of the at least one door and a second cavity situated inside a structural component of a frame of the at least one door and outside of any other door within the vehicle.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in

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the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recited "a loudspeaker having a resonant volume formed by a first cavity situated inside of the at least one door and a second cavity situated inside a structural component of a frame of the at least one door and outside of any other door within the vehicle". However, the specification does not have support for the newly added limitation "a second cavity situated inside a structural component of a frame of the at least one door and outside of any other door within the vehicle". It was not supported in the specification nor in any claim originary.

6. Claim 28 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 28 recited "a loudspeaker having a resonant volume formed by a first cavity situated inside of the at least one door and by a second cavity situated outside of the at least one door, where the second cavity comprises a volume inside a structural component of the frame of the at least one door".

However, the specification does not have support for the newly added limitation "a second cavity situated outside of the at least one door, where the second cavity comprises a volume inside a structural component of the frame of the at least one door". It was not supported in the specification nor in any claim originary.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4, 12-19, 21 and 24-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Otani (JP 07-267003).

Consider claim 1 as best understood with regards to the 112, first problem mentioned above, Otani teaches a sound system for a vehicle having at least one door (see fig.1, (1)), said sound system comprising:

a loudspeaker (2) having a resonant volume formed by a first cavity (5a in the door 1) situated inside of the at least one door (1) and a second cavity (5a', 5b, defines a cavity in the center pillar 4) situated inside a structural component of a frame of the at least one door and outside of any other door within the vehicle (fig. 1); and means for pneumatically coupling said first and second cavities to form said resonant volume (5a,5b' and see abstract).

Consider claims 2-3 Otani teaches that the sound system, wherein the means (see fig.1 (1)) for coupling comprises a first opening (5a) in the first cavity (5a in the door 1) and a second opening (5a',5b) in the second cavity (5a', 5b, defines a cavity in the center pillar 4), the first and second openings (5a, 5a') being arranged in close proximity to each other when the door (1) is closed; and at least one of the two openings is provided with a sealing lip, which is compressed when the door is closed and seals off

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the coupling of the two cavities from the outside (see fig.1 (1 and 6) and see detailed description page 3[0024]-[0026]).

Consider claim 4 Otani teaches that at least one of the two openings (see fig. 1 (5a, 5a')) is provided over the cross-sectional area with an acoustically neutral cover that is permeable to air (see fig.1 (1 and 6) and see detailed description page 3[0024]-[0026]).

Consider claim 12 Otani teaches at least one of the cavities (see fig. 1 (1)) is open to the outside of the resonant volume via diffusion openings (see fig.1 (5a and 5a') and see detailed description page 3[0024]-[0026]).

Consider claims 13-15 Otani teaches the second cavity (see fig.1 (5b' in the door 3) includes a volume defined at least by hollow parts (5a,5b') of the support frame of the vehicle (see abstract); and the support frame includes an A-pillar of the vehicle (see fig.1, (4)) and the support frame includes a B-pillar of the vehicle (the space under said in fig.1, (6)).

Consider claims 16-19 Otani teaches that the support frame includes inherently a sill of the vehicle (see fig.1); and the second cavity (6) includes a volume surrounded by bodywork parts of the vehicle (see fig.3); and the loudspeaker (see fig.1 (2)) is installed in the bodywork parts (see abstract); and the loudspeaker (see fig.1 (2)) is arranged in the door (1 and see abstract).

Consider claim 21 as best understood with regards to the 112, first problem mentioned above, Otani teaches that a sound system for a vehicle having at least one door (see fig.1), the sound system comprising:

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a loudspeaker (2 in fig.1) having a resonant volume formed by a first cavity (5a in door 1) situated inside of the at least one door (1) and by a second cavity (5a', 5b, defines a cavity in the center pillar 4) situated outside of the at least one door, where the second cavity comprises a volume defined within hollow parts (5a', 5b) of a support frame of the vehicle; and means for pneumatically coupling the first and second cavities (5a,5b') to form the resonant volume (see detailed description page 3[0024]-[0026]).

Consider claims 24-25 Otani teaches that the means (see fig.5 (40)) for pneumatically coupling comprises tubing; and the second volume is located within an A- pillar of the vehicle (see fig.1 (4) and see detailed description page 3[0024]-[0026]).

Consider claims 26-27 Otani teaches that the second volume (see fig.1 (5b')) is located within an A- pillar (4) and a door sill of the vehicle (see detailed description page 3[0024]-[0026]; and the second volume is located within an A- pillar, a door sill and a roof support of the vehicle (see figs 1-4 and see detailed description page 3[0024]-[0026]).

Consider claim 28 as best understood with regards to the 112, first problem mentioned above, Otani teaches that a sound system for a vehicle having at least one door (see fig.1), the sound system comprising:

a loudspeaker (2 in fig.1) having a resonant volume formed by a first cavity(5a) situated inside of the at least one door and by a second cavity(5a', 5b, defines as a cavity in the center pillar 4) situated outside of the at least one door, where the second cavity (5a', 5b, defines as a cavity in the center pillar 4) comprises a volume inside a structural component of the frame of the at least one door (see fig.1 and abstract) ; and

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means for pneumatically coupling the first and second cavities (5a,5b') to form the resonant volume (see detailed description page 3[0024]-[0026]).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 5-11, 20, 22-23 and 29-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani (JP 07-267003).

Consider claim 5 Otani teaches that the two cavities (see fig.1 (5a and 5b')) are coupled to one another by a tube connection ((6) and passenger compartment) and abstract); but Otani does not explicitly teach that a telescopic tube is used to connect two openings in the cavities.

However, a telescopic tube connection is just one type of well known tube connection (official notice is taken).

Therefore, it would have been obvious that the cavities connection device as taught by Otani could have used a telescopic tube as claimed for flexibly connecting the two opening cavities.

Consider claims 6-7 Otani teaches the tube connection has two tubes (see fig.1 that can be displaced one inside the other and engage in openings of the cavities and at

least one of the tubes (6) is connected in an articulated manner to one of the two cavities (5a,5b').

Consider claims 8 and 10 Otani teaches that a partially tube (see fig.1, (6)) is provided for the articulated connection; and the two cavities (see fig. 1 (5a,5b')) are coupled to one another by a hose (6) that connects two openings in the cavities (see fig. 1 (5a,5b') and abstract); but Otani does not explicitly that a flexible tube or a flexible hose to connect two openings in the cavities.

However, a flexible tube or a flexible hose connection is one type of well known tube connection (official notice is taken).

Therefore, it would have been obvious that the cavities connection device as taught by Otain could have used a flexible tube or a flexible hose as claimed for easily connecting the two opening cavities.

Consider claim 11 Otani teaches the low-frequency loudspeaker (see fig.1 (2)) is surrounded by a box defining the first or second cavity (see fig.1 (5a,5b') and see dialed description page 3[0024]-[0026]).

Consider claim 20 Otani teaches that the first cavity (see fig 1, (1)) is pneumatically coupled to a cavity situated outside the door by further coupling devices (see abstract); but Otain does not explicitly teach a third cavity situated outside the door.

However Otani does not limit the passenger compartment to be divided in how many cavities.

Therefore, it would have been obvious that the passenger compartment as taught by Otani could have been divided in two cavities such as claimed to enhance the low frequency output signals.

Consider claims 22-23 Otani does not explicitly teach the means for pneumatically coupling comprises a bellows or a telescoping tube connection.

.However, a bellows or a telescoping tube connection is one type of well known tube connection (official notice is taken).

Therefore, it would have been obvious that the cavities connection device as taught by Otani could have used a bellows or a telescoping tube connection as claimed for easily connecting the two opening cavities.

Consider claims 9, 29 and 30, they are essentially similar to claims 22-23 and are rejected for the reason stated above apropos to claims 22-23.

Consider claim 31 Otani teaches that the means (see fig.5 (40)) for pneumatically coupling comprises tubing.

Consider claims 32-34 Otani teaches that the second volume is located within an A-pillar of the vehicle (see fig.1 (4) and see detailed description page 3[0024]-[0026]); and the second volume (see fig.1 (6)) is located within an A- pillar (4) and a door sill of the vehicle (see detailed description page 3[0024]-[0026]; and the second volume is located within an A- pillar, a door sill and a roof support of the vehicle (see figs 1-4 and see detailed description page 3[0024]-[0026]).

Response to Arguments

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11. Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that Otani fails to disclose the various features of amended claim 1; for example, including "a second cavity situated inside a structural component of a frame of the at least one door and outside of any other door within the vehicle " (see the remarks page 9, second paragraph).

The examiner disagrees. Otani teaches a second cavity (5a', 5b, defines a cavity in the center pillar 4) situated inside a structural component of a frame of the at least one door and outside of any other door within the vehicle (fig. 1). Since the claimed language does not define where the cavity is beginning and where the cavity is ending. Therefore, the first cavity is 5a in fig. 1 (1 front door), the second cavity feature (5a', 5b in fig.1) construed as a cavity in the center pillar 4 and the third cavity is 5b' in fig.1 (3 rear door). It meets the claimed limitation as recited.

Applicant further argued that Otani fails to disclose the claimed feature of where "the second cavity comprises a volume defined within hollow parts of a support frame of the vehicle" (see the remarks page 12, second paragraph).

The examiner disagrees. Otani teaches that a second cavity (5a', 5b, defines a cavity in the center pillar 4) situated outside of the at least one door, where the second cavity comprises a volume defined within hollow parts (5a', 5b) of a support frame of the vehicle. Because, the second cavity feature (5a', 5b in fig.1) construed as a cavity in the center pillar 4. Therefore, it meets the claimed limitation as recited.

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Applicant further argued that Otani fails to disclose the second cavity comprises a volume inside a structural component of the frame of the at least one door (see the remarks page 9, last paragraph).

The examiner disagrees. Otani teaches that the second cavity (5a', 5b, defines as a cavity in the center pillar 4) comprises a volume inside a structural component of the frame of the at least one door (see fig.1 and abstract). Because, the second cavity feature (5a', 5b in fig.1) is construed as a cavity in the center pillar 4. Therefore, it meets the claimed limitation as recited.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Waltz (US PAT. 5,902,004) is cited to show other related sound system for a vehicle.

13. Any response to this action should be mailed to:

Mail Stop ____ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

(571) 273-8300

Hand-delivered responses should be brought to:

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner

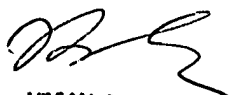
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should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See L. S.
Patent Examiner
US Patent and Trademark Office
Knox
571-272-7501
Date 11-26-2007


VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600